

REMARKS

Claims 21 to 23 were rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the enablement requirement. Claims 20 to 23 and 25 to 35 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 20 to 23, 25, 27 and 30 to 36 were rejected under 35 U.S.C. § 102(b) as being anticipated by Turnquist et al. (U.S. Patent No. 6,105,967). Claims 26, 28 and 29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Turnquist et al. in view of Beichl et al. (U.S. Publication No. 2004/0188943).

New claims 37 to 40 have been added. Support for new claims 37 to 40 can be found in the specification e.g. at paragraphs [0002], [0009], [0001] and [0037] and Figure 1.

Claims 21 to 23 have been amended. Claim 24 was previously withdrawn without prejudice.

Claims 20 to 23 and 25 to 40 are currently pending in this application.

As stated in the Advisory Action, the drawing objection was withdrawn because “Fig. 1 shows a separation site with overlapping ends.” See Advisory Action, page 2.

Reconsideration of the application based on the following is respectfully requested

Rejections under 35 U.S.C. § 112, first paragraph

Claims 21 to 23 were rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the enablement requirement because the terms “closed-type” and “open-type” brush seal were found to be not enabled in the specification. The Advisory Action states that “the definitions of open type and closed type are not presented on the disclosure. See Advisory Action, page 2.

Although Applicants believe that the terms “closed-type” and “open-type” are terms that are well defined in the art pertaining to seals, claims 21 to 23 have been amended to delete the terms “closed-type” and “open-type” without prejudice to expedite the prosecution of this matter.

Withdrawal of the rejections under 35 U.S.C. § 112, first paragraph thus is respectfully requested.

Rejections under 35 U.S.C. § 112, second paragraph

Claims 20 to 23 and 25 to 35 were rejected under 35 U.S.C. § 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. According to the Final Office Action, it is unclear what is being claimed with the term “axially symmetrical components”. See Final Office Action, page 4.

The Advisory Action states that “to be axially symmetrical, one would be able to cut the vane and housing along the axis at any point around the circumference and have two symmetrical pieces. See Advisory Action, page 2.

Applicants respectfully submit the term “axially symmetrical” has been selected by Applicants to adequately describes the orientation of the housing and guide vane as described in the present invention and is fully congruent with the drawings, e.g. Figure 1. Applicants further submit that an alteration of the term “axially symmetrical” may mischaracterize the nature of Applicants’ invention. Therefore, Applicants respectfully re-direct the Examiner’s attention to paragraph [0004] of the specification as filed wherein the axially symmetrical components are described as being “disposed concentrically about one another” and paragraph [0019] which states that “[t]he axially symmetrical guide vane is disposed concentrically about axially symmetrical housing 10” as depicted in Figure 1. Similarly, paragraph [0030] states: “First sealing device 20 having an annular seal design and second sealing device 21 having a brush seal design are axially symmetrical, as are housing 10 and the guide vanes, and are positioned between these two concentrically disposed, axially symmetrical components.” Applicants respectfully submit that in view of paragraphs [0004], [00019], and [0030] in conjunction with Figure 1, the term “axially symmetrical components” would be clear to one of skill in the art. Applicants reassert that the term “axially symmetrical” means that in the axial direction the components are symmetrical about an axis. For illustration purposes only, Applicants submit Appendix 1 which is a mark-up copy of Fig. 1 depicting an axis (“A”) in the direction of going into and out of the paper and showing, as an example, that a first one of the axially symmetrical components may comprise a housing (10) of a gas turbine, and the second one of the axially symmetrical component may include a guide vane ring of the gas turbine having a plurality of vane segments (11 to 15) as recited in dependent claim 35 of the present invention. As you travel in the axial direction (perpendicular to the page) along any point (for example, B and C), the distance from A to B will be constant, as will the distance from A to C. Thus, the guide vane is axially symmetrical about the axis A.

Withdrawal of the rejections under 35 U.S.C. § 112, second paragraph thus is

respectfully requested.

Rejection under 35 U.S.C. § 102(b)

Claims 20 to 23, 25, 27 and 30 to 36 were rejected under 35 U.S.C. § 102(b) as being anticipated by Turnquist et al. (US 6,105,967).

Claim 20 of the present invention recites: “A sealing arrangement, comprising: at least one first sealing device including an annular seal; a second sealing device including a brush seal; wherein the first and second sealing devices are placed between axially symmetrical components symmetrical about an axis, and the second sealing device is positioned so as to be axially offset from the first sealing device; and wherein the annular seal is a metallic piston-ring seal having a separation site.

Claim 20 recites a piston-ring seal. A piston-ring seal is an adjustable split metal ring seal. The diameter is thus flexible. See paragraph [0039].

The Turnquist patent does not show a piston-ring seal. Rather, the Turnquist patent shows “combination brush and labyrinth seals.” See Turnquist, col. 1, lines 10 to 11. The backing plate 38 is fully annular and then cut into segments. See Turnquist, col. 4, lines 51 to col. 5, line 2. The backing plate of Turnquist is not adjustable and does not have a flexible diameter. Moreover, Turnquist describes that “to prevent relative circumferential movement of the brush segment and seal ring segment, the brush segment and seal ring segments are welded to one another adjacent one or both opposite end faces. Moreover, Turnquist would not want a piston-ring seal as it segments its backing plate 38, as well as its seal ring 14 (See Col. 1, lines 65 et seq.).

Withdrawal of the rejections under 35 U.S.C. § 102(b) thus is respectfully requested.

Rejection under 35 U.S.C. § 103(a)

Claims 26, 28 and 29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Turnquist et al. in view of Beichl et al. (US 2004/0188943).

In view of the above, withdrawal of the rejections under 35 U.S.C. § 103(a) thus is respectfully requested.

New Claims 37 to 40:

New claims 37 to 40 have been added. Support for new claims 37 to 40 can be found in the specification e.g. at paragraphs at paragraphs [0002], [0009], [0011] and [0037] and Figure 1.

New claim 37 as recites in pertinent part: "A sealing arrangement for fixed, components placed about an axis, comprising..."

Applicants respectfully submit that Turnquist does not show a sealing arrangement for fixed, components placed about an axis as recited in claim 37 of the present invention. Rather, Turnquist describes a combined labyrinth/brush seal that is provided "in a seal between rotating and stationary components." See Turnquist abstract. Turnquist describes "a seal between the components, comprising an elongated arcuate seal ring segment carried by the stationary component and having an arcuate surface in opposition to the rotatable component, at least one labyrinth seal tooth projecting generally radially from the seal ring segment surface toward the rotating surface." See Turnquist, col. 2, lines 48 to 57. Therefore, Turnquist does not show a sealing arrangement for fixed, components placed about an axis as recited in claim 37 of the present invention.


In view of the above, applicants respectfully request that new independent claim 37, and dependent claims 38 to 40 are in condition for allowance.

CONCLUSION

The present application is respectfully submitted as being in condition for allowance and applicants respectfully request such action.

Respectfully submitted,

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